

Waterway and Wetland Handbook

CHAPTER 110

CHANGING OF STREAM COURSES

GUIDANCE PURPOSE AND DISCLAIMER

This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule apply. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance cannot be relied upon and does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decision made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes, common law and administrative rules to the relevant facts.

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PURPOSE

A permit is required before changing the course of a navigable stream to protect the public against adverse impacts of channel changes. Potential impacts include flooding, habitat loss, fish and wildlife damage, erosion and sedimentation.

MECHANISM

Changing stream courses is regulated by a permit system under Section 30.195, Wisconsin Statutes.

HISTORY

As agricultural use intensified in the southwestern part of the state, farmers straightened many of the region's meandering streams. A straight stream allowed them to farm right up to the edge of the channel.

In the early 1960s, the USDA Soil Conservation Service (SCS) assisted farmers in both planning and costsharing for stream straightenings. As a result, many trout streams were straightened and their fishery value diminished.

This destruction was the primary cause for the passage of the law requiring permits and providing penalties for noncompliance.

After considerable nationwide research which determined the many adverse impacts of stream straightening, the SCS changed its policies to protect the existing streams rather than straightening them. Today, stream straightening proposals are rarely supported by SCS.

Section 30.195 was first passed as Chapter 454, Laws of 1961. Since then, it has been modified four times, most recently in Chapter 392, Laws of 1969. The original intent of the Law was to protect the public interest in navigable water, and this remains the purpose.

STANDARDS

Statutory Standards

Section 30.195, Stats., is only applicable to navigable streams. The following standards are applicable

1. The project must improve the economic or aesthetic value of the owner's land.
2. The project must not adversely effect the flood flow capacity of the stream.
3. The project must not be detrimental to public rights or the rights of riparians located on the stream.

Section 30.195, Stats., does not apply to municipal or county owned lands in counties having a population of 500,000 or more.

Administrative

1. Wetlands. NR 1.95, Wis. Adm. Code, establishes general standards to be applied by the Department decisions affecting wetlands. The Department presumes that wetlands are not to be adversely impacted or destroyed. NR 1.95 further specifies the balancing-test to be used by the Department when determining the potential adverse effects of a project on a wetland versus the benefit to the applicant.
2. Shoreland areas. NR 115, Wis. Adm. Code, establishes administrative standards to be followed by counties in their administration of shoreland zoning ordinances. These standards should be reflected in approving channel changes.
3. Floodplain areas. NR 116, Wis. Adm. Code, establishes administrative standards followed by Local units of government and the state. Permits or orders for channel changes should require applicants to conform with standards established in NR 116.
4. Environmental impacts. NR 150, Wis. Adm. Code, establishes procedures for determining whether a given project requires an Environmental Impact Statement (EIS). channel changes are Type III actions (do not normally require an environmental assessment), unless they are associated with a mineral extraction project. Channel changes associated with a mineral extraction project are Type III actions, requiring an environmental assessment be done.
5. Sand and gravel extraction. NR 340, Wis. Adm. Code, would apply when a sand and gravel extraction project results in a change in the course of a stream. NR 340 contains extensive requirements, including restoration plans and bonding.

PROCESS

Application

The applicant must file a complete set of plans, indicating exactly what is proposed, showing the configuration of the stream before and after the project and describing how the change will be made. Information should be adequate to allow a simple stage-discharge analysis to be performed. Information may include some or all of the following dimensions; material on site; transitions to natural channels and project location. The applicant should provide information about structures (culverts, bridges, dams) in the area of the proposed stream course change and location with respect to the stream course change.

Notice Requirements

A public notice is not required. Traditionally, the Department has required that notice be given to adjacent riparians, and sometimes to other riparians along the stream. If adjacent riparians will be adversely affected by the project, the applicant must obtain their consent before a permit is issued.

Field Investigation and Review Considerations

Upon receipt of a completed application, a field investigation will be made by appropriate Department staff. The investigation and technical review will determine whether a proposed stream straightening will meet the applicable standards. A Water Regulation Investigation form (3500-23) should be completed. Other types of information to be collected during the field investigation and items to be considered during the technical review include:

1. Structures

The applicant should have provided information about structures (culverts, bridges, dams) in the area of the proposed stream course change.

If there are any other structures present, such as dikes, levees, retaining walls or training walls, make a sketch of them. Prepare a scaled map and take photographs if necessary. Any obstructions to the flow of water should be noted and sketched.

2. Stream Characteristics

Take photographs upstream and downstream at the project site. Examine the bank and bed materials to determine the cohesiveness of the material and the organic content. To estimate these parameters, pick up a sample and squeeze it to determine cohesiveness. Note color and odor to indicate organic content.

The condition of the bank and any indication of slumping, erosion, or failure should be noted and documented. The angle of repose is one way of determining whether the stream bank is stable. This angle may be estimated by finding a stable bank and measuring the slope of the bank.

3. Flood Flow Capacity

An altered watercourse must have a hydraulic capacity at least as great as the section it is replacing. In practice, the capacity is generally evaluated during bank full conditions. Normally, straightening a stream and smoothing the banks results in increased flow capacity. If incorrectly designed, a relocation project may result in reduced flood flow capacities.

4. Erosion and Stumping

Most stream straightenings increase flow velocities by shortening the channel length which in turn steepens the gradient. This can result in increased scour in the streambed and possibly increase bank erosion. The significance of increased flow velocities depends upon the bed and bank material. Coarse, rough materials like cobbles and gravel are more resistant to erosion than clay, fine sand and unconsolidated fill which may be very sensitive to increased velocities. If erosion is a problem, the applicant should be required to place riprap or other erosion control devices in appropriate places.

The review should also evaluate possible downstream effects of the project, including increased erosion of downstream riparian's land or potential erosion and undermining of downstream structures. The banks may become unstable if velocities are increased. The investigator must be satisfied that downstream bank slopes will be stable before approving the project. Again, riprap should be required where necessary.

5. Downstream Flooding

Higher average velocities may aggravate downstream flooding since the time of concentration of the basin decreases. This is generally not a problem in the case of small projects, but major projects could increase flooding. If the project will aggravate downstream flooding, downstream riparians must give their consent before a permit can be issued.

6. Biological-Chemical

Channelization may be detrimental to fish and wildlife due to increased erosion and sedimentation, changes in the surrounding water table, streambed disturbance or changes in the stream's flow characteristics.

The field investigation by Department staff must include a determination and evaluation of the fishery and wildlife in the project area.

Together, water management specialists and fish and wildlife managers must consider how the project will affect the habitat of the fishery and wildlife in the area. They should document any objections to the project and suggest possible ways to minimize the project impacts. If the project will significantly damage habitat and the damage cannot be minimized, they should object to the issuance of the permit.

Some possible effects of channelization that should be considered in any evaluation include:

A. Habitat loss:

Channelization can result in a straight uniform channel. Pools, riffles, undercut banks and other preferred habitat are eliminated. Total water edge habitat will be reduced significantly.

B. Temperature change:

Excavation of a new channel is preceded by clearing and grubbing. The loss of streamside vegetation may increase the daily fluctuation of water temperatures. Daytime temperatures will increase and nighttime temperatures will decrease. Also, daytime temperatures may be reduced because of higher flow velocities.

C. Increased turbidity:

Suspended solids will increase at the site and downstream when the new channel is connected to the stream. Suspended solids will remain high as the channel adjusts to new velocities, gradient, bank and bed material. Bed material movement will increase in the new channel and the new bed will lack organic food and substrate material.

Light transmissivity will be temporarily reduced in the new channel and downstream because of the increased sediment transport.

Erosion and sedimentation have been described as having the most insidious effects on aquatic life, in that the process may go unnoticed and the damage can be widespread, cumulative and permanent. Unlike most causes of poor water quality, erosion and the resulting increase in sediment transport may be triggered by channelization and then may continue to increase or even accelerate after the triggering circumstances have ceased. The impacts of channelization may persist on site and downstream for years as a result of thalweg establishment and channel adjustments.

D. Runoff:

The new channel may also increase or decrease runoff and sediment discharge from the adjacent land. If the runoff is agricultural drainage, salts, nutrients and pesticides may be added to the stream.

Improved drainage can increase the rate of groundwater discharge resulting in less water for sustaining stream flows during dry periods.

7. Other Public Rights

Navigation and esthetic quality may be affected by channel changes. Navigation might be impaired if the average depth or width of the new section is less than that of the old section.

Another extremely important consideration is the riparian rights of abutting property owners. The riparian rights of abutting property owners could be adversely affected by removing the stream channel from contact with their lands. In the reverse situation where a new river channel was made abutting a formerly nonriparian property, the Wisconsin Supreme Court rules that where an artificial channel has been made by changing the course of a river, the abutting owners and the public have the same rights in the new channel as if the channel were a natural water course (Lathrop vs. Racine, 119 Wis. 461 [1903]).

FINAL DISPOSITION

A stream straightening permit may be issued or denied by the Department without hearing based upon the statutory standards.

Any person objecting to the decision issuing or denying the permit may seek judicial review by serving and filing a petition in accordance with the provisions of sections 227.15 and 227.16, Stats., within thirty (30) days of the decision date.

MONITORING

Permits issued under Section 30.195 should require the applicant to notify the Department five days before starting work, and notify us within five days of the completion of work. There should be a follow-up inspection to determine whether that work was done in accordance with the approved plans. Enforcement action should be considered if the work deviates significantly from the plans.

EMERGENCY PROCEDURES

There should be no occasion for the emergency issuance of a channel change permit. Obstruction to the free flow of water may be removed under Chapter 88, Stats.

EDUCATION

Several publications provide answers to channel change questions. The handout "If you must alter a stream channel" provides guidance on proper construction practices for channel changes to minimize erosion and sedimentation. The pamphlet series "Public or Private I & 11" explains the concepts of ordinary high-water mark and navigability.

ENFORCEMENT

The Attorney General specified the elements of proof needed to convict someone of an illegal stream straightening in an opinion dated November 9, 1978 (67 Atty. Gen. 265). To obtain a conviction, the state must show that the defendant changed the course of a navigable stream, and that no permit to change the stream's course has been granted to the defendant under Section 30.195. The state need not show that the original portion of the stream was navigable, nor a specific intent to change the stream's course.

LIST OF REGULATIONS

- a) Statutes: 30.195
 - b) Administrative Codes; NR 1.95, 115, 116, 150, 340
 - c) Manual Codes: 3506.1
 - d) Court Cases: Lathrop vs. Racine, 119 Wis. 461 (1903)
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CORRESPONDENCE/ MEMORANDUM

STATE OF WISCONSIN

DATE: July 28, 1992

FILE REF: 3530-2

TO: Jim Addis - AD/5
George Meyer AD/5

Lyman Wible AD/5
District Directors

FROM: C. D. Besadny

SUBJECT: Guidance of Department Regulation of Stream Channelization Projects for Urban Flood Control

Introduction

Department staff, especially in southeast Wisconsin, are being asked to review projects which channelize streams, and occasionally pave the streambed and banks with concrete to reduce localized flooding and/or accommodate other development needs such as design of storm sewers. We have already addressed one such project (Lilly Creek in the Village of Menomonee Falls). Because other similar projects will likely be submitted to us in the future, I believe it is appropriate to provide guidance to those staff who will be involved in the review process.

Guidelines

Stream channelization projects may cause significant adverse environmental impacts and have the potential to increase downstream flooding problems. Concreting of the streambed will likely magnify either of these effects. Therefore, staff who review proposed channelization projects should:

1. Presume that stream channelization is not the best overall solution to flooding or storm runoff problems;
2. Consider alternative approaches, including stormwater management and nonstructural flood damage reduction measures, which may reduce local flooding to an equivalent degree without causing significant adverse environmental impacts or increasing downstream flood damage potential;
3. Require project sponsors to show that they have considered reasonable (cost-effective and practical) alternatives to channelization and provide their reasons for selecting channelization as an alternative; and
4. Issue permits for, or recommend not opposing, channelization projects only when there are no other reasonable alternative to solving a recognized flooding problem, the adverse effects of channelization have been minimized to the extent practicable, and the project meets all other legal requirements.

This guidance is to be applied within the context of specific regulatory standards found in the statutes and rules that are applicable to channelization projects, including the Wisconsin Environmental Policy Act.

Background

Purpose of Stream Channelization Projects

Channelization, with or without concrete lining of the streambed, is typically used to improve the hydraulic efficiency of a channel so that it can carry more flow without overbank flooding. Projects are generally designed to meet conditions ranging from a 10-year storm to the regional (100-year) flood or more.

Most of these projects are designed to reduce or eliminate flooding problems and associated damages to existing development. Some are intended to provide new developable land by reducing the size of the floodplain and floodway. Existing flooding problems are legitimate concerns that need to be dealt with, and structural measures may often be part of the proposed situation. In areas where available land for development is in short supply, creation of additional developable land may also be a high priority for the municipality.

Department Concerns

Our concerns as a regulatory agency generally relate to 1) the environmental impacts of a proposed project, 2) public rights and interests in the waterway which is proposed to be channelized, 3) compliance of the proposed project with floodplain management standards and effects of the project on downstream development, 4) the possibility of resolving problems in a more effective manner or in a manner that addresses other problems (e.g., water quality) through alternative approaches such as stormwater management, and 5) the need to develop a comprehensive approach to resolve flooding problems rather than dealing with them on a piecemeal basis.

1. Environmental impacts: Channelizing of a stream, with or without concreting of the bed, typically removes most, if not all, of the existing aquatic habitat and causes a major change in channel characteristics and dimensions. Substrate and benthic organisms are removed, water levels in and adjacent to the channel (potentially including wetland areas) are typically reduced, and stream flows during dry periods will likely be reduced or eliminated. The entire food chain within the stream ecosystem can be directly or indirectly impacted to varying degrees. Depending on the value of the existing biotic community the consequences can be severe. Successive projects within a given watershed may have substantial cumulative effects on the main stream. Concreting reduces the potential for population of a channelized area and tends to ensure that a uniform channel cross-section will remain for an extended period of time. From a water quality standpoint, channelization tends to increase the quantity of sediment and other pollutants transmitted downstream since these will no longer settle out along a channelized stream segment. In streams where concreted and unconcreted sections occur in succession, substantial streambed instability can be expected in the unconcreted areas. Upland areas near the stream may undergo vegetative and other changes resulting from a more "flashy" flow regime and lowering of the water table.
2. Public rights and interests: Navigable streams are designated by the state constitution for special protection. Since statehood, the Supreme Court and the Legislature have identified a series of "public rights" in these navigable waterways, including boating (navigation), fishing, swimming, maintenance of environmental quality, and enjoyment of scenic beauty. Most of these rights would be adversely impacted by channelization. These effects would be felt in the channelized stream itself and in downstream areas (including waterways and stream discharges into). The issue then becomes the significance of the effect.
3. Floodplain management and public safety: Channelization typically increases velocities and the discharge of water to downstream areas. The usual result is increased flows and flood heights below channelized reaches. This can cause property damage, may result in downstream bridges or culverts not being able to handle the same frequency storms as previously, and will enlarge the 100-year

floodplain downstream from the project, thus placing downstream communities in a position where they need to regulate larger areas of land to limit future damages and affecting owners of property within these areas. State floodplain management standards recognize these problems and require that legal arrangements be made with all downstream property owners who may be affected by increased flooding during the regional flood. However, problems could occur at lesser floods, and these also need to be analyzed.

While ch. NR 116 does not explicitly require that a channelization project reduce the extent of the adjacent regulatory floodplain, a project that didn't would seem imprudent, might not be deemed beneficial and possibly would not meet the standards of ch. 30, Stats. This reduction may be accomplished by designing the channel to contain the 100-year flood within its banks or by a combination of channelization and improving the hydraulic characteristics of the (overbank) area next to the stream. The project must be adequately maintained by the local sponsor so that its ability to convey flow is not reduced.

As with any flood control project, there is a potential for the benefits of a channelization project to be partially or completely negated by upstream development which increases runoff and ultimately the 100-year flood discharge. In rapidly urbanizing areas, potential development of the watershed upstream from the project must be considered in estimating the design flows for the channel.

Another public safety concern is the potential safety hazard that may result from increased velocities in a channelized stream (especially with the streambed concreted). Recent experiences in Milwaukee and Fond du Lac have demonstrated that drownings can occur and ways to minimize the hazard must be considered.

4. Effectiveness of proposed solutions, including opportunities to resolve multiple problems: Channelization, particularly if the streambed is concrete-lined, is an expensive approach which typically is limited to solving an immediate problem of overbank flooding near the channel. The primary effect of these projects is to pass flooding problems on to those downstream instead of resolving them within the immediate affected upstream area. When downstream flooding damages are considered along with the substantial cost of construction and the need to maintain the channelized stream segment to retain its design hydraulic characteristics, such projects may not prove to be cost-effective. Alternatives, especially stormwater management approaches which hold back flooding and reduce peak flows and water levels, should be considered. An especially attractive feature of stormwater management is that this approach can resolve both water quantity and quality problems through proper design.
5. Comprehensiveness of the approach: The "traditional" engineering solution of channelization focuses on getting rid of the water which reaches the channel as rapidly as possible. We are now more aware of that fact that in many cases runoff from development upstream within a watershed can lead to increased flood flows which will exceed the capacity of downstream channels, bridges, etc. This effect can be magnified by channelization which concentrates runoff more rapidly. Design of downstream facilities for "ultimate development" conditions, required by ch. NR 116, can be quite expensive. Few projects are looked at on a system-wide basis and yet each water shed operates as a system from both the hydrologic and hydraulic standpoint. Also, it seems unfair for downstream communities and individuals to continue to bear the cost of flooding problems caused by upstream development.

A more detailed list of specific potential impacts from channelization projects is attached.

Basis for Guidelines

General

The preceding discussion demonstrates a number of concerns which the Department may have with a proposed channelization project. Because of the potential impacts of channelization on both public safety and the environment, other ways of solving flooding problems should be given serious consideration by project sponsors and Department staff. The guidelines on page 1 of this memorandum are intended to aid in that consideration.

Presumption

To ensure that serious consideration is given to other means of solving flooding problems, the Department must begin its review of proposed projects by questioning whether channelization is a reasonable approach. This position should be changed only if the project sponsor, and any independent investigation by the Department or by others, demonstrates that channelization is reasonable under the circumstances. This means that other potential measures to alleviate the flooding problem do not work, are too costly, or cause environmental or public safety problems similar in magnitude to those resulting from channelization.

Alternative Approaches

Many alternatives are available. A partial list is included as Attachment 2. Nonstructural measures are most effective in protecting new development from flood damages. Structural approaches may be an appropriate means of reducing damage to existing development. Nonstructural measures generally reflect an adaptation of human activity to flooding conditions while structural measures are usually an effort to limit flooding to conform to existing or planned human activity. The Department's policy, expressed in s. 87.20, Stats., and ch. NR 116, Wis. Adm. Code, is a preference for nonstructural measures. In some cases, these will not solve the particular flooding problem, but they should be given serious consideration before such a conclusion is reached. These approaches are more flexible and adaptable to change, have fewer irreversible effects, and do not pass problems on to the next downstream property owner or community.

Minimization of Impacts

Where other solutions are not reasonable and channelization is the continued preference of the project sponsor, Department staff must consider whether the project meets applicable requirements and take a position accordingly. Before this occurs, we should seek modifications in project design, including the potential for mitigation, to reduce or offset the adverse impacts of the proposal. When this has occurred, we should normally issue the required permits(s) to take an "as interest may appear" position at any contested case public hearing held on the proposal. In some cases, we may conclude that a project must be opposed because it is still contrary to regulatory standards, even after full consideration of alternatives and minimization of adverse impacts.

Procedural Approach

Staff should, as soon as they become aware of a proposed channelization project, actively work with the sponsoring community to explore alternatives and ensure their full consideration. Design alternatives which would minimize the adverse impacts of channelization should also be explored. Full use of the environmental assessment process should be made to document impacts and the consideration of alternatives and to obtain public involvement in the decision-making process. Potentially affected persons and municipalities should be informed and given a chance to express their views.

Conclusion

These guidelines and the preceding discussion are meant to provide a more consistent and comprehensive framework for Department regulatory review of proposed stream channelization projects, the guidance has been drafted to address "large" projects in urban areas.

Also, you should keep in mind that this is guidance for applying existing legislative and Natural Resources Board policy and is not, obviously, policy itself.

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cc: Linda Bochert - AD/5
Bruce Baker - WR/2
Bob Roden - WZ/6
Doug Morrisette - FM/4
Steve Miller - WM/4
Jim Kurtz - LC/5
C.D. Besadny - AD/5
Water Management Coordinators
Water Management Specialists
Water Regulation Staff

ATTACHMENT 1

Partial List of Specific Potential Impacts of Stream Channelization Projects

1. Changes in hydrologic conditions, including lowering of the water table, reduction of bank storage, drainage of wetlands, greater variation in stream flows, more intermittent flows, and increasing uniformity of flow conditions;
2. Increases in downstream flooding problems, including damage to development, damages to or reduced effectiveness of public facilities and infrastructure, and increases in areas that must be regulated to reduce flood hazards;
3. Adverse effects on water quality, including increased nonpoint pollution, erosion of the channel downstream from the project, reduction in the ability of the channel to contain or filter sediments or other contaminants, increased temperatures due to decreased discharges, and decreases in dissolved oxygen as a result of increased temperatures and contamination and loss of assimilative capacity;
4. Channel instability upstream and downstream from a proposed project caused by increasing velocity, "flashy" flow conditions, erosion of the channel, etc.;
5. Loss of or changes in aquatic habitat and/or habitat diversity leading to undesirable shifts in biological production and the diversity, density or composition of aquatic communities;
6. Losses of or changes in terrestrial habitat and/or habitat diversity leading to undesirable shifts in biological production and the diversity, density or composition of terrestrial communities;
7. Barrier to fish migration and to "travel lanes" used by wildlife; and
8. Reduction in aesthetic values of streams and adjacent riparian areas.

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ATTACHMENT 2

Partial Listing of Measures to Reduce Flood Damages

"Structural"

Levees, floodwalls, or dikes

"Channel Improvements:

Stream channelization

Creation of overflow channels

Removal of obstruction

Flood Control Dams

Impoundments ("wet" dams)

"Dry" dams

Floodproofing of Structures

"Nonstructural"

Runoff Control

Increase infiltration

Reduce rate of runoff

Flood Insurance

Warning or Evacuation

Floodplain zoning

Purchase of land

Information to prospective buyers

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CORRESPONDENCE/ MEMORANDUM**STATE OF WISCONSIN**

DATE: October 10, 1988

FILE REF:

TO: District Directors (WMS)

PMMS Response

Insertion: Chapters 100, 110, 120, Water Regulation Handbook

FROM: Scott Hausmann - WZ/6

SUBJECT: Section 30.19(lm)(e) Exemption From Permit Requirements for Authorized Enlargements

1987 Wisconsin Act 374, the new Chapter 30, changed section 30.19 to allow for maintenance dredging of existing authorized enlargements. Now that we've had a little experience with this section several questions have come up which I'll address in this memo.

1. NR 340 regulates non metallic mining and specifies the requirements for review and permitting. How does this administrative code relate to the exemption for work required to maintain authorized enlargements found within section 30.19?

All existing permits authorized under the old section 30.19 and NR 340 remain unaffected. The status of mining activities issued since adoption of the Act 374 will depend on how the permit was drafted. If the permit cited only section 30.19, the exemption found within section 30.19 is applicable and we could not require a permit for work required to maintain the original dimensions without revoking the original authority. You should note that section 30.07 allows for the revocation of Chapter 30 permits "for good cause".

When appropriate, future permits for non metallic mining should include specific conclusions of law specifically state within the order section that additional permits are necessary for maintenance dredging of unconnected enlargements.

2. Section 30.07 restricts the length of permits to 3 years with the possibility for a 23 year extension. Section 30.20(2) allows the department to issue contracts and permits for up to 10 years. Since the two statutes conflict, the more specific language in s. 30.20 states, governs for dredging permits. How will this affect permits issued under NR 340?

Permits issued prior to the enactment of Wis. Act 374 are unaffected. Permits issued after the enactment are subject to these time frames and must be repermited upon their expiration. If a permit contains a s.30.20, states, permit or contract, we can use the longer time frames outlined in that statute.

3. Some harbors are or have been authorized by use of section 30.19. Can the Department retain authority over dredging operations?

The exemption language within section 30.19 does exclude us from requiring a future permit but we should be able to draft permits to allow our continuing review. For example, a 30.19 permit could be conditioned with a requirement to notify the department of any future dredging and allow for a 30 day review period. I suggest that you use such a provision cautiously and coordinate with the bureau.

4. Some 30.19 permits issued before the enactment of Wisconsin Act 374 specified a sunset date within the permit. How are these permits affected by the exemption from permit for maintenance dredging found within s. 30.19 Wis. Stats.?

We construe any permit limitations issued before the enactment of Act 374 as being valid and unaffected by the exemption specified in section 30.19(lm)(e). It would be unreasonable to assume that specific permit conditions, necessary to protect the water body involved, would be overruled by future statutes. A contrary assumption would force us to anticipate future legislation within the permit process. Therefore, an authorized enlargement with an expired permit date will be considered completed and will require new authorization before maintenance dredging can occur. If no expiration date was specified within the original 30.19 permit conditions, authorization for the enlargement must be considered "active" and the exemption found within s. 30.19(lm)(e) valid.

Reviewed by : Ken Johnson
Robert Sonntag
Mike Cain

CORRESPONDENCE/ MEMORANDUM

STATE OF WISCONSIN

DATE: November 16, 2000

FILE REF: Chapter 110 - Water Regulation Handbook

TO: Water Regulation Guidebook Holder

FROM: Susan Sylvester, AD/5

SUBJECT: Authorizing Ditch Fills for Wetland Restoration

This memo establishes procedures to be used beginning December 1, 2000 to authorize ditch fills for wetland restoration projects. Please insert the following pages in Chapter 110 of your Water Regulation Guidebook.

Authorizing Ditch Fills For Wetland Restoration

The purpose of this guidance is to establish a consistent procedure to authorize wetland restoration projects involving navigable ditches that were originally constructed to drain wetlands. Restoration of a wetland may involve restoring a ditch to its original (preconstruction) condition. This may involve the placement of fill into the ditch for the purpose of restoring the original wetland hydrology. Ditch filling projects may be approved under s. 30.195, Stats. These projects may qualify for a permit under s. 30.195, Stats., because they are changing the channel from the existing dredged configuration to a natural braided channel or diffuse surface or groundwater hydrology. The projects would still be required to meet the applicable standards and conditions of s. 30.195, Stats., including improving the economic or aesthetic value of the owner's land, not adversely affecting flood flow capacity and not being detrimental to public rights or the rights of other riparians. It also must meet the requirements of applicable administrative codes, including NR 103 wetland water quality standards. If the diverted water does affect other landowners, then the project may be completed only if permission from the affected landowners is obtained.

Background:

Historically, drainage projects have been undertaken by straightening stream channels and construction of lateral ditches. Straightening streams and ditch construction modified natural groundwater and surface water flow patterns within watersheds. The result of these drainage projects has been a conversion of wetlands to drained lands. Both channelization and ditch construction have had negative impacts upon instream biota, habitat and wetland functional values.

Many habitat improvement projects have been proposed to restore channel morphology (meanders) in order to enhance and restore instream aquatic habitat, generally for the purpose of enhancing fisheries. Now there is an increasing demand to restore wetland habitat. Stream rechannelization (restoring meanders) and ditch filling are two methods for restoring drained or degraded wetlands to pre-disturbance conditions.

There are several possible scenarios for restoration projects. If a ditch has stream history, then filling it would not be a historic restoration of hydrology and should not be allowed (unless the project also involves re-establishing the original channel). If a ditch does not have stream history but the land will remain in agricultural use at the time that it is proposed to be filled, then it can be filled without a permit unless it has become public through prescriptive use by the public over 20 years. If a ditch does not have stream history but agriculture has been discontinued a property owner does not have a clear regulatory mechanism to fill the ditch. This guidance establishes that the procedure under s. 30.195, Stats., be applied for authorizing these projects.

Significance:

Thousands of acres of wetland have been restored under the Wetland Reserve, Conservation Reserve and other programs. The traditional methods of wetland restoration involve removing or breaking field tiles, plugging ditches and sometimes creating berms or water control structures. As wetland restoration science continues to evolve, we are finding that these traditional restoration methods often will not adequately recreate the pre-disturbance hydrological conditions. Projects with incomplete hydrologic restoration may fail to re-establish high quality wetlands and are often dominated by invasive species. Also, ditch plugs, berms and water control structures require periodic maintenance.

Back filling ditches to restore the original hydrology to re-establish diffuse flow patterns can be maintenance method of wetland restoration. If dredge spoil banks are reconfigured to restore the natural land contours, it also results in a closer approximation of pre-disturbance conditions. Natural vegetation seed banks may still be viable on some sites but will not survive hydrologic conditions that are not similar to the pre-disturbance conditions. Many wetland scientists believe that ditch filling and recontouring to pre-disturbance conditions is a more complete method with a greater likelihood of resulting in sustainable, resilient high quality wetlands.

Affected Parties:

This issue affects all individuals, agencies and organizations that work on wetland restoration projects including WDNR, US Natural Resources Conservation Service, US Fish and Wildlife Service, County Land Conservation Departments, Wisconsin Waterfowl Association, Ducks Unlimited and others. While WDNR regulatory workload may increase on some projects, predictability and consistency are substantially increased over other ways of handling these projects.

This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.